

What is claimed is:

1. An electronic circuit comprising:

a first electrode for electrical connection to an ionization detector system;

a second electrode for electrical connection to an ionization detector system; and

a transformer electrically connected to the first electrode and to the second electrode for creating a spark between the first electrode and the second electrode.

- 2. The electronic circuit of claim 1, further comprising a first resistor electrically connected to a secondary coil in a secondary portion of the transformer.
- 3. The electronic circuit of claim 2, further comprising a second resistor electrically connected to the secondary coil in the secondary portion of the transformer.
- 4. The electronic circuit of claim 3, wherein the second resistor is connected in series with the first resistor.
- 5. The electronic circuit of claim 3, wherein the second resistor is connected in parallel with a diode.

- The electronic circuit of claim 1, further comprising a conjugated clock input 6. electrically connected to the trans
- 9 The electronic circuit of claim 1, wherein the transformer comprises: a primary portion including a primary coil; and

a secondary including a secondary coil, wherein the primary coil includes a different number of loops than are present in the secondary coil.

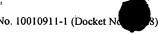
- The electronic circuit of claim //, wherein the primary coil includes a greater number of loops than are present in the secondary coil.
- The electronic circuit of claim 1, further comprising a DC voltage source electrically connected to a primary portion of the transformer.
- The electronic circuit of claim, further comprising a current monitor electrically connected to the DC voltage source.

A method of generating an electrical discharge for an ionization detector system comprising:

providing a first electrode and a second electrode, each electrically connected to an ionization system;

providing a transformer electrically connected to the first electrode and the second electrode;

inputting a DC voltage into the primary portion of the transformer; and generating a discharge current between the first electrode and the second electrode.



- The method of claim 11, wherein the providing the transformer step comprises including a first resistor in a secondary portion of the transformer.
- The method of claim 12, wherein the providing the transformer step comprises including a second resistor in the secondary portion of the transformer.
- The method of claim 13, wherein the providing the transformer step comprises connecting the second resistor in parallel with a diode.
- 14 The method of claim 13, further comprising monitoring a current input.
- The method of clam 12, wherein the providing the transformer step comprises providing a primary coil and a secondary coil in the transformer wherein the primary coil and the secondary coil include a different numbers of loops.
- 16 The method of clam 16, wherein the providing the transformer step comprises providing the primary coil to have a greater number of loops than the secondary coil.
- The method of claim 12, wherein the generating the discharge current step comprises generating a substantially constant steady-state current plateau.

The method of claim 12, wherein the generating the discharge current step 19. comprises generating a current having at least a first steady-state current plateau and a second steady-state current plateau.

The method of claim 19, wherein the generating the discharge current step comprises providing the net amplitude of a first steady-state current plateau exceeding the amplitude of a second steady-state current plateau.